

NANOSTRUCTURE SENSOR DEVICE WITH POLYMER RECOGNITION LAYER

ABSTRACT OF THE DISCLOSURE

A nanostructure device is made up of a nanostructure, such as a single-walled carbon nanotube, spanning two electrical conductors, mounted on a substrate. A
5 passivation layer may cover a portion of the conductors and the nanostructure. A thin polymer layer is deposited over an exposed portion of the nanotube. In this configuration, the device may perform like an n-type field effect transistor. The polymer material may be selected for interactivity with a particular chemical species or compound. The device may therefore be used as a resistive sensor that responds to
10 the particular species or compound by exhibiting a change in resistivity.